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EXAMINER

SINGH, RAMNANDAN P

ART UNIT PAPER NUMBER

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/638,237	Applicant(s) BROWNING ET AL.	
	Examiner Ramnandan Singh	Art Unit 2646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>Apr. 26, 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-3 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 1 recites the limitations “**providing** a model of the sound transducer portion of the audio reproduction system; **providing** a control circuit configured according to the model; and **providing** to the control circuit a signal which is indicative of a state of the sound transducer portion”. Clearly, claim 1 does not produce “tangible results”. See MPEP 2106 (IIA).

Preliminary Amendment

3. The Preliminary amendment filed on April 25, 2005 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

- (i) On page 17, the last paragraph introduces NEW MATTER.
- (ii) On page 18, Equation (20) is NEW.
- (iii) On page 22, Equation (35) is NEW.

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(iv) On page 23, Equation (39) is NEW.

(v) On page 50, Equations (62), (63) and (64) are NEW.

Applicant is required to cancel the new matter in the reply to this Office Action.

Specification

4. The abstract of the disclosure is objected to because it contains more than 150 words. Correction is required. See MPEP § 608.01(b).

Compact Prosecution

5. According to M.P.E.P. §706, the goal of examination is to clearly articulate any rejection early in the prosecution process so that the applicant has the opportunity to provide evidence of patentability and otherwise reply completely at the earliest opportunity. Keeping this in mind, prior art rejection is also made.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 20-26, 43-44, 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Matz et al [US 4,041,249].

Regarding claim 1, Matz et al teach a process for controlling an audio reproduction system of a telephony device [col. 6, line 60 to col. 7, line 6] which includes a sound transducer [col. 6, lines 27-38] , the process comprising:

providing a model of the sound transducer portion of the audio reproduction system [col. 6, lines 27-38];

providing a control circuit (200) configured according to (i.e. adapted to) the model [Fig. 3; col. 15, line 63 to col. 16, line 1]; and

providing to the control circuit a signal which is indicative of a state of the sound transducer portion [col. 16, lines 23-33].

Regarding claim 2, Matz et al further teach the process , comprising:

providing a model of a signal conditioning portion of the audio reproduction system [col. 5, line 65 to col. 6, line 16; col. 7, lines 3-6].

Regarding claim 3, Matz et al further teach the process , wherein providing a signal indicative of a state of the sound transducer portion comprises providing a signal which is indicative of a position of a portion of the sound transducer [col. 16, lines 23-33].

Regarding claim 20, Matz et al further teach the process, wherein providing to the control circuit a signal indicative of a position of the sound transducer comprises: generating the signal indicative of a position of the sound transducer using an electrical characteristic of the system [[col. 16, lines 23-57].

Regarding claim 21, Matz et al further teach the process, wherein the sound transducer includes a coil (170) and the electrical characteristic is an impedance of the coil [Fig. 2; col. 10, line 60 to col. 11, line 2].

Regarding claim 23, Matz et al teach a process for controlling an audio reproduction system of a telephony device which includes a sound transducer shown in Fig. 3, the process comprising:

preparing a model of the sound transducer portion of the audio reproduction system [col. 6, lines 27-38];

providing a control circuit (200) having first input to filter (202) and second input to tone generator (246) ;

configuring(i.e. adapting) the control circuit (200) as a function of the model [Fig. 3; col. 15, lines 49-62];

providing an audio signal to the first input [col.15, line 63 to col. 16, line 1];

providing to the second input a signal which is indicative of a state of the sound transducer [col. 16, lines 6-14]; and

utilizing the control circuit to generate an output signal which is a function of the signal indicative of a state of the sound transducer and the audio signal [col. 16, lines 23-33; col. 18, lines 4-14].

Regarding claim 24, Matz et al further teach a process, wherein providing to the second input a signal which is indicative of a state of the sound transducer comprises providing to the second input a position indication signal which is indicative of a position of a portion of the sound transducer [Fig. 3; col. 15, line 49 to col. 16, line 22]. .

Regarding claim 25, the limitation is shown above.

Regarding claim 26, Matz et al further teach the process, wherein the sound transducer includes a coil (170) and the electrical characteristic is an impedance of the coil [Fig. 2; col. 10, line 60 to col. 11, line 2].

Regarding claim 43, Matz et al further teach the process, comprising preparing a model of a sound transduction portion of the audio reproduction system [col. 6, lines 27-38].

Regarding claim 44, Matz et al further teach the process, wherein preparing a model of the sound transducer portion of the audio reproduction systems comprises preparing a model of a speaker transducer [col. 6, lines 27-38; col. 7, line 40-57].

Regarding claim 48, Matz et al further teach the process, comprising preparing a model of a signal conditioning portion of the audio reproduction system [col. 5, line 65 to col. 6, line 16; col. 7, lines 3-6].

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matz et al as applied to claims 2 and 23 above, and further in view of Stich [US 5,789,691].

Regarding claim 4, Matz et al do not teach expressly using a back electromotive force (i.e. counter-EMF) to condition an audio signal.

Stich teaches using the control circuit to condition an audio signal as a function of a back electromotive force of a driver of the sound transducer [col. 8, line 39 to col. 9, line 4].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Stich with Matz et al in order to reduce the effect of the back EMF on a coil [Stich; col. 8, lines 53-56].

Claim 49 is essentially similar to claim 4 and is rejected for the reasons stated above.

10. Claims 5-16, 27, 31-35, 39-42, 45-47, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matz et al as applied to claims 1, 23 above, and further in view of Lawson [US 4, 914,750].

Regarding claim 12, Matz et al do not teach a speaker transducer having a coil and diaphragm assembly.

Lawson teaches a sound transducer comprising a speaker transducer having a coil and diaphragm assembly [Figs. 20-25; col. 8, line 44 to col. 9, line 25].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Stich with Matz et al in order to improve the frequency response of the speaker [Stich; col. 8, lines 3-25].

Claims 6, 31, and 39 are essentially similar to claim 12 and are rejected for the reasons stated above.

Regarding claim 5, Lawson further teaches using the control circuit to condition an audio signal as a function of an impedance of a driver of the sound transducer [col. 10, line 61 to col. 11, line 2].

Claims 7, 40, 45, 50 are essentially similar to claim 5 and are rejected for the reasons stated above.

Regarding claim 8, Lawson further teaches using the control circuit to condition an audio signal as a function of a motor factor of a driver of the sound transducer [Figs. 32-33; col. 10, lines 16-32].

Claims 10, 41, 47 are essentially similar to claim 8 and are rejected for the reasons stated above.

Regarding claim 9, Lawson further teaches using the control circuit to condition an audio signal as a function of a spring stiffness of a spring support (40) of the sound transducer [Fig. 3; col. 5, lines 43-52].

Claims 11, 42, 46 are essentially similar to claim 9 and are rejected for the reasons stated above.

Regarding claims 13-16, 27, 32-35, the limitations are shown above.

11. Claims 17-19, 28-30, 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matz et al as applied to claims 3 and 24 above, and further in view of Lawson [US 4,914,750] and further in view of Smith [US 6,661,897 B2].

Regarding claim 17, Matz et al do not teach expressly a speaker transducer having a coil and diaphragm assembly.

Lawson teaches a sound transducer comprising a speaker transducer having a coil and diaphragm assembly [Figs. 20-25; col. 8, line 44 to col. 9, line 25].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Stich with Matz et al in order to improve the frequency response of the speaker [Stich; col. 8, lines 3-25].

Further, Matz et al do not teach optically generating a signal.

Smith teaches optically generating a signal [col. 18, lines 6-26].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Smith with Stich and Matz et al in order to provide a stable operation of the diaphragm (100) [Stich; col. 8, lines 3-25].

Claims 28 and 36 are essentially similar to claim 17 and are rejected for the reasons stated above.

Regarding claim 18, Smith teaches both optically generating a signal and using an infrared light source [col. 18, lines 6-38].

Regarding claims 19, 29-30, 37-38, the limitations are shown above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (571) 272-7529. The examiner can normally be reached on M-TH (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ramnandan Singh
Examiner
Art Unit 2646

A handwritten signature in black ink, appearing to read 'RMS', with a long horizontal stroke extending to the right.